

Translation

PATENT COOPERATION TREATY  
PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>VJ203053PCT</b>	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. <b>PCT/FR2004/001652</b>	International filing date (day/month/year) <b>28.06.2004</b>	Priority date (day/month/year) <b>27.06.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>C03C17/22, C03C17/245, C23C14/34</b>		
Applicant <b>SAINT-GOBAIN GLASS FRANCE</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <b>6</b> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																									
<p>4. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>		<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/001652

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:

international search (Rule 12.3 and 23.1(b))  
 publication of the international application (Rule 12.4)  
 international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

the international application as originally filed/furnished  
 the description:  
 pages 1-15 \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:  
 nos. 1-33 \_\_\_\_\_ as originally filed/furnished  
 nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:  
 sheets 1/2-2/2 \_\_\_\_\_ as originally filed/furnished  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (specify): \_\_\_\_\_  
 any table(s) related to sequence listing (specify): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (specify): \_\_\_\_\_  
 any table(s) related to sequence listing (specify): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-33	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-33	NO
Industrial applicability (IA)	Claims	1-33	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1 EP-A-0 601 928

D2 US-A-5 532 062

D3 US-A-5 770 321

D4 WO-A-02 46491

D5 US-A-5 454 919

D6 US-B-6 190 511

D7 US-A-6 086 727

D8 Mitary S ET AL: "Preparation de couches minces de Ag<sub>2</sub>O et action de certains gaz sur celles-ci / preparation of Ag<sub>2</sub>O thin films and the action of certain gases on the thin solid films", Elsevier-Sequoia S.A., Lausanne, CH, vol.46, no.2, 17 October 1977, pages 201-208, XP 001073840, ISSN: 0040-6090

D9 US-A-6 500 676

D10 US-A-6 002 208

D11 US-A-5 962 080.

## 2. Inventive step

The present application fails to meet the requirements of PCT Article 33(1), since the subject matter of claims 1 to 31 does not involve an inventive step as defined by PCT Article 33(3).

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## 2(a) Claim 1

D1, which is considered to be the prior art closest to the subject matter of claim 1, describes (column 1, lines 1 to 24; column 2, line 13 to column 4, line 57; column 5, lines 8 to 49; examples 1 to 7; claims 1 to 15) a substrate, in particular made of glass, having very low roughness,

- coated with at least one dielectric thin film (5 to 30 nm), which film is:
  - made of oxide(s), nitride(s) or oxynitride(s) (of Zn, Sn, Ta, Si);
  - deposited by cathode sputtering, in particular magnetic field assisted;
  - reactive in the presence of oxygen and/or nitrogen;
  - and exposed to at least one ion beam.

Consequently, the subject matter of claim 1 differs from this known substrate in that the dielectric film exposed to the beam has a linear ionic source.

The problem that the present invention is intended to solve can be considered to be that of achieving a refractive index.

The solution proposed in claim 1 of the present application, according to which the film exposed to the ion beam has a refractive index that can be adjusted according to the parameters of the ion source, is not considered inventive (PCT Article 33(3)) for the following reasons:

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D6 (column 4, line 1 to column 6, line 57; claims 1 to 8) discloses that the film exposed to the ion beam has a refractive index that can be adjusted according to parameters of the ion source.

See also:

- D2 (column 2, lines 1 to 63; column 3, line 1 to column 5, line 62; claims 1 to 21);
- D4 (page 2, line 9 to page 5, line 29; page 7, line 26 to page 8, line 24; page 9, line 4 to page 12, line 6; claims 1 to 20);
- D9 (column 1, line 40 to column 2, line 63; column 3, line 35 to column 5, line 63; claims 1 to 47).

A person skilled in the art seeking to control the index of the film would consider the subject matter of D1 to D11 and, through simple examples, would adjust the index according to parameters of the ion source.

Dependent claims 2 to 17 contain no feature which, when combined with the features of any one of the claims to which they refer, defines subject matter that complies with the PCT requirements of novelty and/or inventive step.

2(b) Claim 18 (glazing)

The same argument applies, *mutatis mutandis*, to the subject matter of the independent claim 15, which is therefore not inventive either, since D1 to D8 disclose glazing.

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## 2 (c) Claim 19 (deposition method)

Generating an ion beam in a sputtering chamber is known from the prior art (see D1 to D11 and the corresponding passages cited in the international search report).

In the light of D1 to D11 and the corresponding passages cited in the international search report, dependent claims 20 to 30 contain no feature which, when combined with the features of any one of the claims to which they refer, defines subject matter that complies with the PCT requirements of novelty and/or inventive step.

## 3. Claim 31 (facility for deposition onto a substrate)

The combination of features of independent claim 31, namely:

a facility for deposition onto a substrate (in particular glass) comprising

- a sputtering chamber (cathode, for example magnetic field assisted);
- at least one linear ion source capable of creating at least one ion beam;

is known from the prior art (see D1 to D11 and the corresponding passages cited in the international search report).

In the light of D1 to D11 and the corresponding passages cited in the international search report, dependent claims 31 to 33 contain no feature which, when combined with the features of any one of the claims to which they refer, defines subject matter that complies with the PCT requirements of novelty and/or inventive step.

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